

ROLE OF HUMAN RESOURCE FOR EFFECTIVE DISASTER MANAGEMENT IN HYDERABAD DIVISION, SINDH

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ABSTRACT

As per the World Disaster Reports, the impacts of disasters (both manmade and natural) on humans are escalating across the globe with each passing day which has attracted great focus on the issue of disaster management. Pakistan is no exception to this where natural hazards (earthquake and floods, etc.) are recurrent phenomena due to climate change and cause heavy loss to human lives, standing crops and property. In recent years, where factors contributing towards vulnerability are wide spread, the challenges posed by disasters, whether natural or manmade, to humanity are larger than ever and the principal element in this challenge is the human resource dimension. It has been consecutively observed in the disaster history that still the focus has not been given on human resource perspective in disaster management. This paper aims to study the role of human resource (people affected, specialists, experts, etc.) for effective disaster management in Hyderabad Division of Sindh. For this purpose, effectiveness indicators were first identified and determined through extensive literature review. A total of 219 individuals (various categories) were selected through the simple random sampling technique for questionnaire survey. Primary data was processed and statistically analyzed using factor analysis and inferential (multiple regression etc.) statistics in order to study the relationship between human resource and disaster management. The results indicate that there is significant relationship between human resource practices such as contingency planning, training and development, communication and effective disaster management. However, results showed that human resource practices have not been paid attention for its best use in disaster management in Pakistan. This paper, therefore, recommends adoption of the best human resource practices for reducing the negative effects of disasters and suggests measures that will enhance resilience of the communities and for creating capacity to cope with the future (especially floods in case of Sindh) hazards.

KEYWORDS: Disaster management, human resource practices, training, communication, contingency planning

INTRODUCTION

World disaster reports document rising frequency and intensity of disasters due to climate change and impacts of disasters (both manmade and natural) on humans are escalating across the globe which has attracted great focus on the issue of disaster management (IFRC, 2002-2016). Since, the attacks on world trade Centre, Tsunami in Japan, Hurricanes, Earthquake in Kashmir, heavy Floods, etc., role of Human Resources (HR) in managing those disaster effectively has been increased over the time. Continuous

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waves of terrorism, security concerns and country's exposure and vulnerability to disasters and natural hazards could be graded between moderate to severe (Bacha , 2016). Researchers and policy makers are focusing on planning and managing the HR to manage the disasters effectively to reduce the pre and post disasters costs both on human and financial resources at their minimum. Statistics suggest that in South Asia alone during the last decade, over one million people were killed and over ninety-five million were affected by disasters (Jang, 2015). Numerous minor scale of the daily disasters, which do not enter the formal statistics also caused huge disruption as well. This disruption can generate more problems than the physical consequences (Quarantelli, 1997). Therefore, in recent times where factors contributing towards vulnerability are wide spread, the challenges posed by disasters, whether natural or manmade, to humanity are larger than ever and the principal element in this challenge is the HR dimension (Jang, 2015) either at implementation stage or as affected ones. Effective Disaster Management (DM) is only possible through the involvement of HR in local communities by identifying and emphasizing the best HR practices needed to handle post disaster and pre-disaster situations. The native populations are the primary subjects to be affected by disasters and at the same time they are the first one to respond; thus, their prompt and well organized response to the adverse situation can saves their lives (Arora, 2013). Consequence of disasters can cause health, social, economic (Shaw, 2011) and psychosocial (Drury, 2009) issues in the locals as well as the whole nation. It was identified that recently attention on preparedness has increased manifold due to continuous occurrence of natural or manmade disasters (Caruson, 2008). Hence, emphasis on intergovernmental coordination and relationships among all levels of government is also increased since disasters do not adhere to geographical or cultural boundaries (Arora, 2013). The overall upsurge in disasters with inherent damages have stressed on enhancing HRs competences and skills through proper selection, placements and training in perspective of disasters leading to effective DM. It is always very much prospective to decrease the overall negative impact of disasters by accepting best HR approaches and adopting successful strategies. It has been consecutively observed in the disaster history that focus has not yet been given on HR perspective in DM or disaster risk reduction (DRR). HR management (HRM) is creating and making the paramount conceivable utilization of individuals for attaining the organizational goals (Härtel, Fujimoto, Strybosch, & Fitzpatrick, 2007). Whereas, DM encompasses an integrated and continuous progression of planning, organizing, directing and applying measures which embrace a cycle of prevention, mitigation, capacity building, preparedness, response, rehabilitations and reconstruction etc. (Arora, 2013). Therefore,

this paper deals with the role of human resource (people affected, specialists, experts, etc.) for effective DM in Hyderabad Division of Sindh Asian Disaster Reduction Center (ADRC) reports that Pakistan is geographically distributed into five major portions (Bacha , 2016). Sindh is South-Eastern part of country with geographic area of 140,941Km² that constitutes about 18% of Pakistan. Like rest of Pakistan, Sindh's economy is also based on agriculture, which mainly depends on the artificial irrigation modes besides lying on the side of Sindh River. Sindh is prone to several disasters and hazards. Mostly the disasters in this area are considered as natural. The most common in order of priority in Sindh are floods, dearth (drought), earthquake, storms, extreme temperatures, terrorism and epidemics etc. (NDMA, 2012). Due to Climate change, Floods and drought are the most frequent disasters which have caused severe damage to physical infrastructure, crops, humans and huge destruction to public infrastructure. The common cause of floods is monsoon. The floods usually affected the Province as regular feature with interims. The maximum rate of recurrence was recently recognized for flood during 2010 which affected entire province. Rains and floods have been noticed in recent eras during 1992, 1995, 2010, 2011 and 2012, due to which cumulative losses accounted for are loss of life approximately 1200, cropped area damaged to 5.3 million acres, houses damaged 3.0 million, animal perished 0.650 million (PDMA, 2012). In nut shell, twenty million people, nearly half of population of Sindh's province was migrated and affected (PDMA, 2012). Approximately fifty percent urban population is residing in slums areas (Katchi Abadis) with insufficient living conditions and inadequate housing. The locals always did their best to cope with the adverse impact of disasters. But still several questions can be raised about advanced preparedness especially on-the-job training of rescuers, mitigation, prevention and making of plans for smooth rescue, relief, response, reconstruction and rehabilitation of affected ones. All these steps of DM cycle are clearly expressed by the DM Continuum (see Figure 1).

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Fig. 1 DM Cycle
Source: (Arora, 2013)

The lasting effects of the disasters are still not fully comprehended. This is recent horrible past, though afterwards a lot has been done to make DM system in some shape like National Disaster Management Authority (NDMA) and Provincial Disaster Management Authority (PDMA) etc. but still it is not fully matured in terms of mainstreaming with the world-known best practices of HR. For a successful management, it is very essential to examine and review our mistakes in the past along with good things that happened and to find areas of maneuver and rooms of improvement. This would give us innovative and brilliant ideas for enhancing and equipping HR for effective and efficient DM. Results from the 2010 / 2011 floods and disastrous drought are likely to enlighten us how to prevent the devastating effects of the forthcoming challenges. There is a need to identify strengths and weaknesses in our system in a very incisive manner for best utilization of our valuable human and material resources. In fact, least utilization and application of the HRs has been recognized to ranking of Pakistan as one of the most insignificant economies of world. Since, paper on Ranking Disaster Risk in Pakistan at District Level displays twenty southern districts which are at risk or with medium vulnerability (Rafiq, Feizizadeh, Blaschke, & Zeil, 2011).

Perry (2013) identifies the fact that very little research has been steered on the linkage of HRs with disaster preparedness and planning, nevertheless after the increase in the number of present devastating events it is essentially becoming a more deeply researched topic. Also, existing

literature supporting, (Perry, 2013) and other studies have identified the role of HR in DM. Hence, based on the above stated gap in research, there is dire need “to analyze the role of HR and identify the HR practices to be used in effective DM in Hyderabad Division”. Hence, the main aim of this paper is to investigate the role of HR practices for effective DM with recommendations to better equip the locals and PDMA to meet the desired standards for reducing the Disaster risks and losses.

RESEARCH METHODOLOGY

Study Area

Literature review done in the previous section concludes that almost every year, large area of Hyderabad Division gets flooded during Monsoon mainly due to Indus River and high-water table particularly in Tando Muhammad Khan, Badin and Thatta Districts. On 12th August 2010, flood water entered in Division causing numerous minor and major breaches including breach at Kot Almo, Tori Bund, Goth Faqir and Goth Saleh (see Figure 2). It resulted in unprecedented losses to lives and property. Considering the past experiences, monsoon flood water usually passes through River Indus and due to the low-lying nature of terrain, province Sindh including Hyderabad Division faces floods almost every year. As per rehabilitation department of government of Sindh, Hyderabad Division consists of 415 slum areas, which are highly vulnerable due to living astride River Indus and get affected due to floods. Therefore, Hyderabad is selected as study area for current research to study the role of HR in effective DM. The details of heavy losses and damages occurred due to supra flood of 2010 are given in Table 1.

Table 1. Details of heavy losses and damages occurred during flood of 2010 in Hyderabad Division of Sindh Province

Districts	Persons Died (BE+NBE)	Village Affected	Person Affected	House Damaged	No of Relief Camps	Persons in Relief Camps
Dadu	46	1,166	920,105	168,112	432	123,000
Hyderabad	10	35	125,000	5,000	148	57,612
Jamshoro	0	553	395,700	84,088	229	144,845
Mariari	1	31	45,600	1,511	47	15,187
TM Khan	4	79	36,578	1,060	32	10,560
T Allahyar	-	-	-	-	162	13,464
Thatta	7	977	895,400	107,981	462	265,772
Badin	0	-	-	-	214	55,823
Total	68	2841	241,8383	367,752	1726	686,263

Source: (PDMA, 2012)

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Fig. 2 Areas of Hyderabad Division, Sindh severely affected by floods in 2010 & 2011

Source: (PDMA, 2012)

Target Population and Sample

The sampling unit of the study includes local government authorities and departments like PDMA, NDMA, Armed Forces, DM Experts, NGOs, Charity Organizations, and Others (HR Managers, academicians, officials involved in strategy formulations, students and volunteers' workers etc.). Simple random sampling technique has been used for data collection based on recommended size of more than 200 sample by (Nunnally, 1968). Sample size according to (Comfrey, 1992), may be measured approximately on the following scale: "50 - very poor; 100- poor; 200 - fair; 300- good; 400- very good; 1000 or more-excellent". A response rate and replies of 50% and / or above is an acceptable one for statistical reporting (Mugenda, 2008). In this study, total of 219 respondents were selected using questionnaire distribution through field survey and interviewed personally.

Survey and Data Collection

Both primary and secondary data has been collected. Secondary data was collected from various articles printed in various journals, information gathered from official's papers, research reports, survey results and authentic sources & websites etc. Primarily field study of Kachi Abadies of Matiari Districts of Hyderabad Division has been conducted. Mostly HR which is employed for DM in the said areas in the shape of Armed Forces, NGOs, Charity organizations and officials of PDMA, were the target population for this study. Thus, understudy areas are very important to be investigated for research as is evident from huge losses occurred in supra flood of 2010. Accordingly, for primary data collection, questionnaire survey was conducted through field survey from DDMA, DM Experts & Armed

Forces, NGOs, Charity Organizations and Others (HR Managers, officials involved in strategy formulations, students and volunteers' workers etc.). The response rate for the intended survey remained very encouraging as myself and my representative discussed the questions with the respondent for addressing the queries. The population size of the study was initially 250 respondents. The same numbers of questionnaire were distributed and received back in which 31 questionnaires were excluded as they were not filled properly. Thus, 219 questionnaires were used for research representing a response of 88 %. The identity of questionnaires was not mentioned to make sure the unbiased response as well as to get the factual and valid information.

Data Analysis Methods and Variables Used

A researcher and professor identify five generalizations about emergency and DM: (Siegel, 1985) first, is the importance of planning and organizing (human) in anticipation of disaster events. Behavior in planned situations is more efficacious and purposive. A second generalization is that training at all levels is extremely important. Third, training is an important element to be planned in key organizations. This may result in modification in structure, roles, and missions. The fourth generalization is the requirement for a command and control center to receive and send accurate messages, to allocate resources, and to establish control. Lastly, it is vitally important that key boundary spanning roles in the DM network be developed before disasters occur.

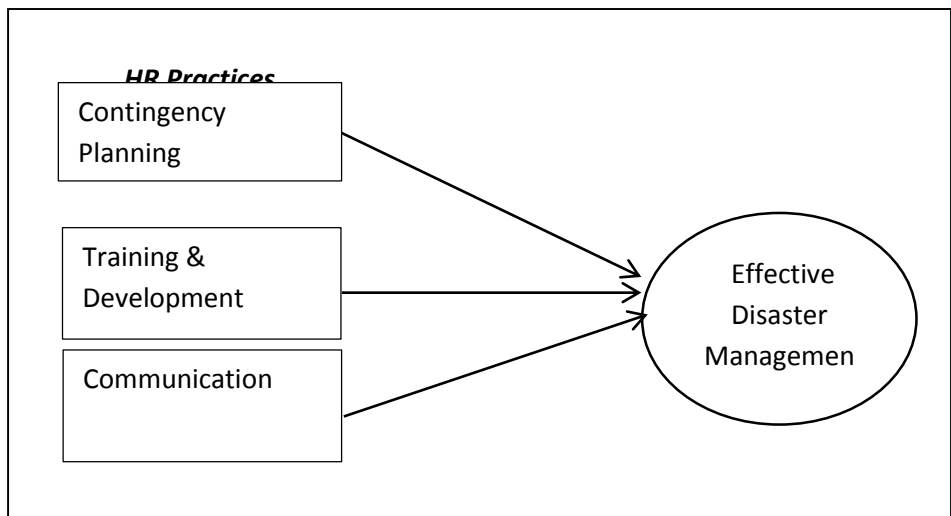
As a well-recognized fact, articulation of HR is very vital and essential part of the whole cycle of DM (Merlot & Cieri, 2012). DM is just not possible without active contribution of HRs and therefore, it is felt to develop a strong link between the two. Though, the connection (subtle link) between HRM and DM seemingly exist but in a very delicate manner (Arora, 2013) which further bleaks away in Pakistani dimension in general and Sindh in particular. However, when best HR practices adopted like contingency planning, training and development and communication then it will definitely reduce the overall negative impact of disasters. Thus, conceptual framework shows the relationship between the dependent variables with the independent variables (see Figure 3). The best HR practices like contingency planning, training and development and communication are our main independent variables that have significant relationship with dependent variable of effective DM.

Relationship of HR practices with DM have been calculated using 30 and above-items scale developed by (Borges, 2012) applying only for contingency planning, training and communication (see Table 2). Each practice would have different scales. As is measured first 6 scale are policies for DM and next 9 scale depend on contingency planning and 8 scale are

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depends on training and last 8 on communication. One example entry of contingency planning is “My organization or community prepared for emergency response plan, including evacuation, sheltering and lockdown etc.”. One example entry of training is “Community disaster training and mock drills are an effective tool in reducing casualties” and “DM training increases the general understanding of disaster and precautions to be taken”. The sample of communication scale is “A highly reliable communication plays a very vital role in a community's resilience against disasters.”

Fig.3 Conceptual framework of the study



Based on the above conceptual framework and literature review mentioned above, following hypotheses have been formulated.

H: There is a positive and significant relationship between HR Practices and effective DM.

H₁: There is a positive and significant relationship between Contingency planning and effective DM.

H₂: There is a positive and significant relationship between Training & Development and effective DM.

H₃: There is a positive and significant relationship between communication and effective DM.

Table 2. HR Practices and DM (Instrumentation)

Variable	Source
HR Practices and DM	(Borges, 2012)
31	
DM	“
6	
Contingency Planning	“
9	
Training and Development	“
8	
Communication	“
8	

Source: Survey data, 2019

Scales and Measures

All variables for the study have been measured on a 5 point Likert scale ranging from strongly disagree=1 to strongly agree=5.

Data Analysis Procedure

Reliability and validity test and regression analyses were used to analyze the data. In addition, Exploratory Factor Analysis (EFA) along with Principal Component Analysis (PCA) is employed in order to determine main factors (independent variables) for predicting the DM (dependent variable).

Multiple linear regression analysis:

Relationship between effective DM and HR practices is investigated by multivariate technique i.e. multiple regression. Score values of the selected factors obtained using EFA and PCA are considered as independent variable for predicting the effective DM (dependent variable). The multiple regression equation can be presented as:

$$DM = a + b_1FS_1 + b_2FS_2 + b_3FS_3 + e_i$$

Where,

a = regression constant (intercept of the line), b_1 , b_2 , and b_3 are regression coefficients of Factor Scores (FS_i) and e_i is the error term of the regression model. DM = Effective DM (dependent variable). All the data were analyzed using SPSS software.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Demographic data in Table 3 depicts that out of total 219 respondents, 73.5% were male that is 161 in numbers and the one-froth were female (58 in numbers). Majority of the respondents (52.5 %) belongs to young age

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group (20-30). Whereas, almost 84 % of the respondents have less than or equal to 40 years of age. In addition, only 4.5 % respondents belongs to old age group (51 & above). Average age of the respondent is 25 years. Apart from gender and age, working experience and education plays an important role in every step of life particularly in crises situation and enable the individuals to tackle disaster situation effectively. Data of Experience are scattered with highest experience of 5 years ratio of 51.1% that is 112 in numbers. . Almost fifty percent of the respondents have 5 years working experience in the study area. Furthermore, about 99 % of the respondents have completed 12 years or higher education in the area. Out of which 45 % have completed Master level education and more importantly, 19 respondents who had higher level of education (M.Phil/Ph.D) in the study area (see Table 3).

Table 3. Demographic profile of the respondents

	Frequency	Percent
<u>Gender</u>		
Male	161	73.5
Female	58	26.5
Total	219	100.0
<u>Age (years)</u>		
20-30	115	52.5
31-40	70	32.0
41-40	24	11.0
51-Above	10	4.5
Total	219	100.0
<u>Qualification</u>		
Intermediates	35	16.0
Graduates	57	26.0
Masters	90	41.1
MPhil or PhD	19	8.7
not clear	17	7.8
Uneducated	1	0.5
Total:	219	100
<u>Experience</u>		
0-4	77	35.2
5	112	51.1
6-10	8	3.7
10-15	10	4.6
15 – above	12	5.5
Total	219	100.0

Source: Survey data, 2019

Reliability Tests of the Questionnaire and Variables

Reliability test of the questionnaire and responses given by the respondents is checked by Cronbach's statistic and results are presented in Table 4.

The results of reliability test indicates that calculated Cronbach's values fall between minimum 0.60 of DM and maximum 0.769 of Communication, which shows the excellent internal consistency among the variables

Table 4. Cronbach's Alpha test of Reliability (N=219)

Variables	Cronbach'sAlpha	No. of Items
Communication (IV)	0.769	8
Training (IV)	0.716	8
Contingency Planning (IV)	0.768	8
DM (DV)	0.604	8

Source: Survey Data, 2019

Exploratory Factor Analysis and Principal Component Analysis

HR practices comprised on three different aspects that include contingency planning, training and development and communication. These dimensions play an important and effective role in effective DM. In this study, 25 items were used to represent these three dimensions of HR practices. Exploratory Factor Analysis along with Principal Component Analysis is employed in order to determine that how many factors are measured by these 25 items? Which item measure similar factor? And finally, which HR practices are represented by which factors? More importantly, exploratory factor analysis enables a research to examine the precision of variables by shrinking large set of data into small and meaningful segments (Emory & Cooper, 1991).

Before proceeding to the results of EFA and PCA, sampling data adequacy and fitness is checked by the KMO (Kaiser Meyer Olkin) and Bartlett's sphericity tests. It has been pointed out by (Kaiser, 1974) that for a satisfactory factor analysis, KMO test value should be at least 0.5 or more. Table 5 indicates that KMO value is 0.901, which is treated as superb and is well above the minimum threshold value of 0.50. Furthermore, Bartlett's test is used to study the strength of the relationship among variables/items used for HR practices in the context of effective DM. Bartlett's sphericity test is actually used to reject the null hypothesis that the correlation matrix among variables/items is an identity matrix and there is no or week correlation among the variables. Table 6 shows the Bartlett's sphericity value of 1927.847, $p = 0.000 < 0.05$ which indicates that there is statistically significant and strong correlation exist among the variables/items.

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Table 5. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.901
Bartlett's Test of Sphericity	Approx. Chi-Square	1927.847
	Df	300
	Sig.	0.000

Source: Survey Data (2019), Author Estimation

Table 6 depicts the results of exploratory factor analysis. In the current study, 3 factors were considered and the results indicate that Eigen values of these three factors are greater than one, therefore they are selected as independent variables for multiple regression model (Johnson & Wichern, 2002) and also defined by (Tabachnick & Fidell, 2001). Total Variation explained by these three factors is about 50.75%, which is almost equal to the minimum threshold value of 50%. Factor 1, factor 2, and factor 3 contributes 29.59, 11.73, and 9.43 of the total variation explained respectively (see Table 6).

Technically, a factor (or component) represents whatever its variables have in common. Our rotated component matrix (see Table 7) indicates that factor (component 1) is precisely measured by 9 HR practices (items) and are positively related ranging from 0.635 to 0.822 with component 1. Similarly, factor (component 2) is measured by 8 HR practices (items). Factor 2 is positively related and the value ranges from 0.740 to 0.865. Finally, third factor (component 3) comprised of eight items valued from 0.505 to 0.914. Furthermore, results presented in Table 7 validate considered factors and items used for the model, since value of factor loading for each construct is greater than 0.50 (Ahmed, Vveinhardt, & Štreimikienė, 2018) also validated by (Wilkes, Doblin, & Shapiro, 1992).

Table 6. Total Variation Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.396	29.586	29.586	3.396	29.586	29.586	2.867	19.067	19.067
2	1.933	11.731	41.317	1.933	11.731	41.317	1.891	17.159	36.226
3	1.058	9.433	50.750	1.058	9.433	50.750	1.629	14.524	50.750

Extraction Method: Principal Component Analysis.

Source: Survey data (2019), Authors Estimation

In addition, rotated component matrix also demonstrates that items CP1 to CP9 measures factor (component 1) and all these variables are related to contingency planning, therefore factor (component 1) can be interpreted as

“Contingency Planning (CP). In addition , factor (component 2) is measured by TD1 to TD8 and these variables (items) belongs to Training and Development aspect of HR practices, therefore, factor (component 2) is interpreted as Training and Development (TD). Lastly, factor (component 3) is measured by CM1 to CM8 and is treated as Communication factor (see Table 7).

Table 7. Rotated Component Matrix^a.

Factors	Items	Factors loadings of Components		
		CP	TD	CM
<i>Contingency Planning (CP) for recovery and rehabilitation</i>	CP1	0.822		
	CP2	0.781		
	CP3	0.810		
	CP4	0.727		
	CP5	0.753		
	CP6	0.922		
	CP7	0.607		
	CP8	0.577		
	CP9	0.635		
<i>Training and Development</i>	TD1		0.740	
	TD2		0.781	
	TD3		0.865	
	TD4		0.767	
	TD5		0.883	
	TD6		0.837	
	TD7		0.853	
	TD8		0.791	
<i>Communication</i>	CM1			0.850
	CM2			0.914
	CM3			0.878
	CM4			0.869
	CM5			0.82
	CM6			0.513
	CM7			0.643
	CM8			0.505

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Source: Survey data (2019), Author Estimation

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Factors of Effective DM: Multiple Regression Approach

The proposed relationships is investigated and confirmed through multivariate techniques such as multiple regression analysis. For this purpose, score values of the selected factors (CP, TD, CM) are used as independent variables, whereas DM is used as dependent variable for the model. The results indicate that model is reliably predict the variation in the response variable i.e. effective DM very well ($F = 325.525$, $p = 0.00$). In addition, there is relationship between factors of HR practices such as contingency planning (CP), development and training (DT), communication and effective DM and the result indicates that factors of HR practices are accountable 71.4 % of the variation in effective DM (R-square = 0.714). Furthermore, there is no multi-collinearity in the data used for the model (see Table 8).

Contingency planning is an important factor of HR practices for effective DM. Almost all workplaces must chalk out an emergency and contingency plan for any eventuality that could be indistinct for the employer and employee to work through issues like these and many more (Perry, 2013). This plan will include aspects like communication, evacuation, shelter, payroll and personnel records (Law, 2010). It describes significance to train employees on how to respond and how to create crisis procedures (Castro, 2011). Anyhow, where planning has been attempted, some public officials found that implementation was difficult and problematic (Wolensky, 1990). Findings of this study indicate that contingency planning (CP) is positively associated with effective DM and there is statistically significant relationship (Coefficient of CP = 0.185, $t = 2.685$, $p = 0.008$) between them in the context of natural hazard. Hence, the research hypothesis formulated by this study i.e. there is significant relationship between Contingency planning and effective DM is accepted. Similar leveraging relations of HR with DM were found by a researcher (Arora, 2013).

Table 8: Factors of Effective DM (Multiple Regression Model)

Factors of DM	Coefficients	T	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)	3.85	7.36	0.000		
TD	0.32	6.16	0.000	0.51	1.95
CM	0.18	3.39	0.001	0.43	2.34
CP	0.19	2.69	0.008	0.53	1.88

a. Dependent Variable: DM
b. Predictors: (Constant), CP, TD, CM
F = 325.70, p = 0.00
R Square = 0.714
Durbin-Watson = 2.117

Source: Survey Data (2019), Authors Estimation

Apart from contingency planning, training and development also plays pivotal role in effective DM. According to (Garvin & Edmondson, 2008), thinking and learning organizations are accomplished at two groups of skills. Firstly, they are determined at acquiring, creating, generating, understanding, transferring and finally preserving and holding knowledge. Secondly, they can adjust their performance to respond and re-join to the new techniques, insights and knowledge they acquire. Mostly organizational culture remains committed to learning. However, these organizations must know how to thrive and survive in a varying environment (Torlak, 2004). Prominent organizational theorists including (Argyris & Schön, 1978), like (Schein, 1983), similarly (Chandler, 1990), lastly (Peter, 1995) endorse the idea of creating a culture dedicated to learning and thinking in organizational systems. Henceforth, the important aspect of DM and HRM “depends not so much in drafting manuals as the case with developing learning processes which give managers (executives) the mental competences, self-assurance, and elasticity to imagine nonstandard crises.” As the administrative behavioral agent, HR is at the vanguard and frontline of developing and emerging innovative methods and approaches to build DM competencies. Wheel of crisis, innovation in training and simulation are identified as best activities of training (Thomas & Zhou, 2013). The results of this study indicate that training and development has positive impacts in effective DM and there is statistically significant relationship (Coefficient of TD = 0.32, $t = 6.16$, $p = 0.000$) between them in the context of natural hazard (see Table 8). Hence, the research hypothesis formulated by the current study i.e. there is significant relationship between training and development and effective DM is accepted. Similar relation has been found by (Arora, 2013).

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Finally, communication among DM staff and rescuers is equally important in effective DM. Literature reveals that Communication identified as a critical indicator of an organizational preparedness for crisis (Hosie, 2006). The responsiveness and quality of both internal and external communication is vital. Whenever a disaster occurs, it may be some time which can be rare as well between employees and employers and outside that they can communicate among themselves or with each other. It can happen because of loss of communication or due to re-location because of evacuation. It has been identified that one set of action or plan for employers to recover, accelerate and improve the communication can be to prepare a place to be connected to their Websites or be online for employees to “check-in” or a phone number preferably toll free that the employees can make call from any place or site (Barron, Phipps, & Steinmeyer, 2005). It is stated that detailing one focal person to communicate with can be very important to evading misperception, rumors and confusion regarding whom to connect and how to maintain contact and initiate various actions after a disaster (Castro, 2011). Findings of this study pointed out that communication (CM) is positively associated with effective DM and there is statistically significant relationship (Coefficient of CM = 0.18, $t = 3.39$, $p = 0.001$) between them in the context of natural hazard. Hence, the research hypothesis formulated by this study i.e. there is significant relationship between communication and effective DM is accepted.

Country like Pakistan, which is highly at risk of disasters both natural and manmade must established strong DM policies linked with HRM and implements it in good faith. As the paper also lay down a comprehensive, yet simple concept that may be adopted and implemented immediately, that may help to minimize the impact of disaster socially, economically and environmentally. Floods of 2010 and 2011, locals exhibited huge courage and resilience despite the lack of basic necessities and trained HRs to handle the disaster. In fact, after these floods, the need to appropriately train the HR for effective DM was felt. The slum areas (katchi abadies) affected by the 2010 floods and local government mostly had rudimentary policies for DM with little integration of HR planning with the DM policies. In the survey carried out as a part of this paper, it was revealed that preparation of contingency plans, effective communication and training given to the workers, engaged in post-disaster reconstruction in the division, was not very effective except Army personnel. Building databases, contingency and communication plans and availability of qualified and trained HR is important to ensure quality of data and facilitate proper implementation of policies and other rules and regulations. It is domineering to impart training not only to responders and all-out health professionals, but also to IT experts and last but not least mental health

experts etc. It has frequently been observed that following after disasters, several employees do lose their basic livelihood and jobs. It becomes essential to retrain and train employees to handle new jobs/assignments or entirely additional jobs. From the outcome of responses received, it is obvious that meager or no training was imparted to the employees to grip entirely new/additional jobs, in case they lost jobs post-disaster. However, there is further scope for improvement in all aspects of HR practices.

The outcome of the present paper has revealed that vocational training helps in revival of the livelihood and renewal of employment as it could have been demonstrated in the aftermath of the 2010 floods. Such important training should be given to the populations leading to the growth of resilient HR within the nation. Vocational training taught and imparted to the young individuals will act as a safety net in securing/retaining employment and will assist the young graduates find suitable jobs. Almost one-fourth of the respondents felt that this indeed was desired in the case following the 2010 and 2011 flood disaster. A substantial number of respondents contended (76%) that mock drills and community disaster training are effective tools in reducing casualties.

CONCLUSION AND RECOMMENDATIONS

The fundamental purpose of present paper was to analyze the relationships between HR practices and DM. To perceive and detect such a significant issue; a relevant and detailed literature was reviewed and some hypotheses were developed. Basically, paper is based on quantitative methods in which cross sectional data had been gathered from the participants of Hyderabad Division, Sindh. The respondents were the individuals from various departments and academia of Hyderabad, division Sindh. The questionnaire was reformed and adapted from the supporting studies and domain literature and further tested and applied to collect the information from the respondents using simple random sampling technique. The items and substances for such variables including training, communication and contingency planning were generated from the previous research studies conducted around the globe

The overall and inclusive reliability of individuals' factors noted as a satisfactory. The anticipated relationships were confirmed through multiple regression analysis. Findings of this study indicate that there is positive and statistically significant relationship among contingency planning, training, communication and effective DM. Similar outcomes were established by (Arora, 2013), who earlier confirmed that such relationships exists in the context of natural hazard. Such results may reflect that a high level of training, contingency planning and effective communication would enable effective response and effective DM in context of Pakistan.

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In this way, Pakistan should make effective policies regarding the elimination of a dangerous situation pertaining to natural hazards. The government should launch such policies where extensive training is conducted for the communities and organization for sustaining various hazards and disasters. Moreover, it should offer the trainings and vocational centers for enhancing the skills among the individuals of human society. This study may offer guidelines for policy makers and economic agents to control negative effects of disasters through improving the main factors, which were highlighted by the findings of this study. Besides, this paper may contribute to the relevant literature of integration of HRM with DM particularly in the developing contexts.

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